



Test Report issued under the responsibility of

**TEST REPORT**

**IEC 60950-1: 2005 (2nd Edition) and/or EN 60950-1:2006
Information technology equipment – Safety –
Part 1: General requirements**

Report Reference No.	2520400-3336-0018 (140256)	CB/DE1- 36535 / A3
Tested by (name + signature)	Frank Richter	
Approved by (name + signature)	Günter Straube	
Date of issue	2010-09-16	
CB Testing Laboratory	VDE Testing and Certification Institute	
Address	Merianstrasse 28, D-63069 Offenbach, Germany	
Testing location / procedure	CBTL <input type="checkbox"/> RMT <input type="checkbox"/> SMT <input type="checkbox"/> WMT <input checked="" type="checkbox"/> TMP <input type="checkbox"/>	
Testing location / address	TDK Innoveta Inc. 3320 Matrix Drive, Suite 100, Richardson, Texas 75082, USA WMT (TDAP File no. 2520400-9501-0001)	
Applicant's name	TDK Innoveta Inc.	
Address	3320 Matrix Drive, Suite 100, Richardson, Texas 75082, USA	
Test specification:		
Standard	IEC 60950-1:2005 (2 nd Edition) ;EN 60950-1:2006+A11:2009-03 DIN EN 60950-1:2006 + A11 (VDE 0805 Teil 1 + A11): 2009-11	
Test procedure	CB –scheme, VDE	
Non-standard test method	N/A	
Test Report Form No.	IECEN60950_1C	
Test Report Form(s) Originator	SGS Fimko Ltd	
Master TRF	2006-06	
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Test item description	DC DC Converter for building in		
Trade Mark	TDK		
Manufacturer	TDK Innoveta Inc.		
Model/Type reference	iQL Series (see model matrix appendix 1)		
Serial Number.....			
Ratings			
	Input:	DC 36 - 60 V (SELV), or DC 36 – 75V (TNV-2), max. 10A	See main report
	Output:	(SELV) refer to model matrix	
	Ambient:	Max. 125°C at Q403	

Copy of marking plate:
See main report

Summary of testing: (see main test report)			
Clause 1.5	Components	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 1.6	Power interface	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 1.7	Markings and instructions.....	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 2.1	Protection from electric shock and energy hazards	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 2.2	SELV circuits	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 2.3	TNV circuits	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 2.4	Limited current circuits	<input type="checkbox"/> Pass	<input checked="" type="checkbox"/> N/A
Clause 2.5	Limited power sources	<input type="checkbox"/> Pass	<input checked="" type="checkbox"/> N/A
Clause 2.6	Provisions for earthing and bonding	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 2.7	Overcurrent and earth fault protection in primary circuits	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 2.8	Safety interlocks.....	<input type="checkbox"/> Pass	<input checked="" type="checkbox"/> N/A
Clause 2.9	Electrical insulation	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 2.10	Clearances, creepage distances and distances through insulation :	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 3.1	Wirings.....	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 3.2	Connection to an a.c. mains supply or a d.c. mains supply	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 3.3	Wiring terminals for connection of external conductors	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 3.4	Disconnection from the mains supply	<input type="checkbox"/> Pass	<input checked="" type="checkbox"/> N/A
Clause 3.5	Interconnection of equipment	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 4.1	Stability.....	<input type="checkbox"/> Pass	<input checked="" type="checkbox"/> N/A
Clause 4.2	Mechanical strength	<input type="checkbox"/> Pass	<input checked="" type="checkbox"/> N/A
Clause 4.3	Design and construction.....	<input type="checkbox"/> Pass	<input checked="" type="checkbox"/> N/A
Clause 4.4	Protection against hazardous moving parts	<input type="checkbox"/> Pass	<input checked="" type="checkbox"/> N/A
Clause 4.5	Thermal requirements	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 4.6	Openings in enclosures.....	<input type="checkbox"/> Pass	<input checked="" type="checkbox"/> N/A
Clause 4.7	Resistance to fire	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 5.1	Touch current and protective conductor current.....	<input type="checkbox"/> Pass	<input checked="" type="checkbox"/> N/A
Clause 5.2	Electric strength	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 5.3	Abnormal operating and fault conditions	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 6	Connection to telecommunication networks.....	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Clause 7	Connection to cable distribution systems	<input type="checkbox"/> Pass	<input checked="" type="checkbox"/> N/A
Annex B	Motor Tests under abnormal conditions	<input type="checkbox"/> Pass	<input checked="" type="checkbox"/> N/A
Annex C	Transformers.....	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> N/A
Annex G	Alternative Method for determining minimum clearances	<input type="checkbox"/> Pass	<input checked="" type="checkbox"/> N/A
Annex M	Criteria for telephone ringing signals.....	<input type="checkbox"/> Pass	<input checked="" type="checkbox"/> N/A
Annex U	Insulated winding wires for use without interleaved insulation	<input type="checkbox"/> Pass	<input checked="" type="checkbox"/> N/A

Test item particulars	
Equipment mobility.....	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> stationary <input type="checkbox"/> fixed <input type="checkbox"/> transportable <input checked="" type="checkbox"/> for building-in
Connection to the mains	<input type="checkbox"/> pluggable equipment <input type="checkbox"/> direct plug-in <input type="checkbox"/> permanent connection <input checked="" type="checkbox"/> for building-in
Operating condition	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> short-time <input type="checkbox"/> intermittent
Over voltage category	<input checked="" type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV
Mains supply tolerance (%)	Unit is rated 0% tolerance
Tested for IT power systems	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V)	--
Class of equipment	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input checked="" type="checkbox"/> Not classified
Mass of equipment (kg).....	<18kg
Pollution degree	<input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	IP---
Possible test case verdicts	
- test case does not apply to the test object.....	N/A (Not Applicable)
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement	F (Fail)
Testing	
Date of receipt of test item.....	2010-09-16
Date(s) of performance of tests	2010-09-16
General remarks:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.	
"(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report.	
Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
Factory (for information only)	
Name.....	TDK Innoveta Inc.
Address.....	3320 Matrix Drive, Suite 100, Richardson, Texas 75082, USA
Name.....	TDK Lambda Malaysia
Address	PL033 Kawasan perindustrian Senai, Locked Bag No. 110 81400 Senai, Johor, Malaysia

General product information:**Conditions of Installation:**

The equipment shall be installed in compliance with the enclosure, mounting, spacing, casualty and segregation requirements of the end-use application.

DC-DC Power Supply for building-in, ratings see page 2.

The units were tested with a maximum continuous output.

The manufacturer specified max. 125°C at Q403

The Electrical and Fire Enclosures are to be provided by the end product.

The power supply series provides Basic insulation based on DC 75 V, between input and output. (see main report)

Operating Conditions:

Units are components within customer's end-use system. Input to converters is DC 40 - 75 V (SELV)

A. If the input meets all requirements for SELV, then the output may be considered SELV

B. If the input meets all requirements for TNV-2, then the output may be considered SELV

C. If the input meets all requirements for ELV, then the output may be considered ELV

The unit is suitable for a maximum manufacturer's recommended ambient operating temperature (T_{mra}) of 25 deg C.

Unit is for building in (Class I or Class II) and designed for Pollution Degree 2 and Overvoltage Category 1.

The power models are not internally fused. An external input line normal blow fuse with a max. value of 20A is required.

The product has been tested according to standard IEC 60950-1:2005 (2 nd Edition) / EN 60950-1:2006 and those deviations taken into account of (see main test report)				
<input checked="" type="checkbox"/> CENELEC common modifications	<input checked="" type="checkbox"/> United Kingdom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Finland	<input checked="" type="checkbox"/> Denmark	<input checked="" type="checkbox"/> Ireland	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Sweden	<input checked="" type="checkbox"/> Germany	<input checked="" type="checkbox"/> Spain	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Norway	<input checked="" type="checkbox"/> Switzerland	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input checked="" type="checkbox"/> CB Bull. NATIONAL DIFFERENCES IEC 60950-1(2nd Edition)				
<input checked="" type="checkbox"/> Switzerland	<input checked="" type="checkbox"/> Spain	<input checked="" type="checkbox"/> Ireland	<input checked="" type="checkbox"/> Sweden	<input checked="" type="checkbox"/> USA
<input checked="" type="checkbox"/> Germany	<input checked="" type="checkbox"/> Finland	<input checked="" type="checkbox"/> Korea	<input checked="" type="checkbox"/> Group Differences	<input type="checkbox"/>
<input checked="" type="checkbox"/> Denmark	<input checked="" type="checkbox"/> United Kingdom	<input checked="" type="checkbox"/> Norway	<input checked="" type="checkbox"/> Canada	<input type="checkbox"/>

These tests fulfil the requirements of standard EN ISO/IEC 17025.

This test report includes the following Appendices:		
Appendix No.	Description	Page(s)
1	Model Matrix	1

Appendix to test report reference No. :		2520400-3336-0018
VDE Test- and Certification Institute Merianstrasse 28 D - 63069 Offenbach	IEC 60950-1:2005 (2 nd Edition) and/or EN 60950-1:2006 DIN EN 60950-1 (VDE0805)	
TYPE OF APPLIANCE :	DC DC Converter	
Made by :	TDK	
Trade mark :	TDK	
Model/type ref. :	iQL48020A120V-0xx	
Rated :	see main test report	
Commission received from :	Steven F. McKitrick	Date: 2010-09-16
<i>Modification on the appliance</i>		
1. Add model iQL48020A120V-0xx (-R) to the VDE licences 40020283, for model differences refer to model matrix		
Remarks: No testing necessary		